



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/770,379	01/29/2001	Tatsuya Matsunaga	058856/0102	7096

22428 7590 11/25/2003

FOLEY AND LARDNER
SUITE 500
3000 K STREET NW
WASHINGTON, DC 20007

EXAMINER

CHOOBIN, BARRY

ART UNIT	PAPER NUMBER
----------	--------------

2625

DATE MAILED: 11/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/770,379

Applicant(s)

MATSUNAGA ET AL.

Examiner

Barry Choobin

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2,21-23 and 25-28 is/are rejected.
- 7) ☒ Claim(s) 2-20 and 24 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 recites the limitation " in the direction for displacement measurement".

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 25 –27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshii et (US 5,969,820).

As to claim 1, Yoshii et al disclose a displacement sensor for automatically extracting a coordinate of a measuring point from an image obtained by using an imaging device according to a prescribed measuring point extraction algorithm (column 5, lines 35 – 39) and computing a desired displacement from the automatically extracted measuring point coordinate (Yoshii et al disclose that various coordinate information may be extracted from the signal, thus disclosing a coordinate determining means (see Fig.16A, 16B, 17, and column 10, lines 23-36).

However, Yoshii et al is silence about display data editing means.

But, Yoshii et al disclose a signal processing circuit 220 (see fig.15), and a CCD imaging device 66b (Fig.5). Moreover, it has been known that signal-processing elements are often configured to edit images once captured from devices such as CCD cameras. Accordingly, the image editing means may be said to be either inherent or implied in the disclosure of Yoshii. (See MPEP 2112). In the alternative, if such element where not deemed inherent or implied, the addition image editing software to said system would have been commonly known in the art. (See MPEP 2144.03)

As to claims 2 and 27, Yoshii et al disclose the imaging device consists of a two-dimensional imaging device (column 9, lines 28 – 37).

As to claims 25 and 26, Yoshii et al disclose a displacement sensor system, comprising: at least one sensor head incorporated with a light source for generating a light section beam and an imaging device for imaging an object to be measured which is illuminated by the light section beam (column 2, lines 10 – 22); a main unit connected to the sensor head or the sensor heads with an electric cord (Fig.5), the main unit being adapted to automatically extract a coordinate of a measuring point from an image obtained by the sensor head by using a prescribed measuring point extraction algorithm (Yoshii et al disclose that various coordinate information may be extracted from the signal, thus disclosing a coordinate determining means. See Fig.16A, 16B, 17, and column 10, lines 23-36.), and to compute a displacement according to the automatically extracted coordinate of the measuring point (see claim 1); and a console unit formed integrally, with or separately from the main unit for supplying various commands to the main unit (although Yoshii et al is silence about a keyboard or a mouse. But a console

Art Unit: 2625

unit for supplying various commands to the main unit is well known in the art (Official Notice);

the main unit further comprising display data editing means for editing at least part of data used from the time of obtaining the image until the time of computing the displacement for use as display data for an image monitor. However, Yoshii et al is silence about display data editing means.

But, Yoshii et al disclose a signal processing circuit 220 (see fig.15), and a CCD imaging device 66b (Fig.5). Moreover, it has been known that signal-processing elements are often configured to edit images once captured from devices such as CCD cameras. Accordingly, the image editing means bay be said to be either inherent or implied in the disclosure of Yoshii. (See MPEP 2112). In the alternative, if such element where not deemed inherent or implied, the addition image editing software to said system would have been commonly known in the art. (see MPEP 2144.03)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshii et al in view of Bonnefous (US Patent 6,159,151).

Art Unit: 2625

As to claim 21, Yoshii et al disclose a displacement sensor as recited in claim 1 (see claim 1), However, Yoshii et al is silence about the display data comprises a trend graph image showing a plurality of computed displacements in a time sequence.

But, Bonnefous discloses signal processing comprising a trend graph image showing a plurality of computed displacements in a time sequence (Fig.7, and column 9, lines 33-48).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the work of Bonnefous with Yoshii et al in order to qualitatively and quantitatively enhance evaluation of the distortion or non-distortion of the graphic lines simulating the displacements of points.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 22 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshii et al in view of Dong (5,923,427).

As to claim 22, Yoshii et al disclose a displacement sensor for automatically extracting a coordinate of a measuring point from an image obtained by using an imaging device according to a prescribed measuring point extraction algorithm, and computing a desired displacement from the automatically extracted measuring point coordinate (see claim 1).

Art Unit: 2625

However, Yoshii et al is silence about means for defining a measuring point extraction range in association with the image obtained by the imaging device.

But, Dong discloses a distance sensing system-comprising position sensing detector in conjunction with a range finding element (column 5, lines 58-65). Yoshii et al and Dong are analogous art, since they are from a similar problem solving area, in that each involves position measurement. See *Medtronic, Inc. v. Cardiac pacemakers*, 721, f.2d 1563, 1572-1573, 220 USPQ 97, 103-104 (Fed. Cir. 1983). The motivation for combination reference would have been to incorporate the range finding element and position sensing of Dong with the position sensing device as disclosed in Yoshii et al. Means for automatically extracting a measuring point coordinate from a part of the image within the measuring point extraction range according to a prescribed measuring point extraction algorithm (Yoshii et al disclose that various coordinate information may be extracted from the signal, thus disclosing a coordinate determining means. See Fig.16A, 16B, 17, and column 10, lines 23-36.)

Claim 28 is similarly analyzed and rejected.

Allowable Subject Matter

2. Claims 2 – 20 and 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2625

US 2003/0007680 to Iijima et al is cited for Three-dimensional information processing apparatus and method.

US 4612580 to Endo et al is cited for Image signal reproduction circuit for swing image sensor.

US 2003/0067613 to Ishikawa et al is cited for Displacement sensor.

US 6549650 to Ishikawa et al is cited for Processing of image obtained by multi-eye camera.

US 2002/0154318 to Matsunaga et al is cited for Visual displacement sensor.

US 5905576 to Takada et al is cited for Optical displacement measurement device and optical displacement measurement system.

CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry Choobin whose telephone number is 703-306-5787. The examiner can normally be reached on M-F 7:30 AM to 18:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Application/Control Number: 09/770,379

Page 8

Art Unit: 2625

Barry Choobin
November 18, 2003

A handwritten signature in black ink, appearing to read 'J. K. Patel', with a long horizontal line extending from the end of the signature.

Jayanti K. Patel
Primary Examiner